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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Dario Calogero Castiglione

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EXAMINER

ALANKO, ANITA KAREN

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/532,736	Applicant(s) CASTIGLIONE ET AL.	
	Examiner Anita K. Alanko	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

The subject matter of claim 4 (the use of three substrates) of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). This objection could be overcome by submitting a drawing of a three-dimensional view of the product, showing how the three substrates, each with patterning on at least one surface, cooperate to form the imaging device (as described in the specification at page 6, lines 27-29.)

Specification

The disclosure is objected to because of the following informalities: on page 4, lines 8 and 29, reference numeral "5" is described as either a "processor" or a "controller." Consistent terms should be used. On page 5, line 26, the "or else" is unclear.

Appropriate correction is required.

Claim Objections

Claims 9-14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 9-14 are method claims that define a method for making a substrate. It is intended use that the substrates are for an imaging device, therefore claims 9-14

could conceivably be infringed by a reference which would not also infringe on claims 1-8. This objection could be overcome by changing the preamble to cite: "A process of making an imaging device according to any one of the preceding claims, comprising..."

Claims 1, 9 and 10-11 are objected to because of the following informalities: Claims 1 and 9 have period marks in the middle of the sentence where there should be commas. In claim 1, line 8, "a substrate" should cite - - the substrate.- - Claim 9, line 2 cites "an" where it should cite - - are - -. Claim 11, line 3, cites "amid" where it can cite - - amide- - (or polyamide). Appropriate correction is required.

Allowable Subject Matter

Claims 1-4 and 6-14 are allowable over the prior art.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach an imaging device or a method of making an imaging device to be used with millimeter and/or sub-millimeter radiation comprising at least a pair of substrates, at least one of which is patterned on at least one surface with a patterning defining at least one radiation detector, each radiation detector comprising:

an antenna adapted to receive millimeter and/or sub-millimeter electromagnetic radiation,

a mixer channel coupled to said antenna and in communication with a via extending through the substrate for connection to a signal output, a mixer comprising filters being mounted in the mixer channel for extracting an intermediate frequency signal in dependence upon said radiation received by the antenna,

a waveguide structure coupled to said mixer and having a signal input for connection to a local oscillator, wherein the mixing channel intersects the local oscillator waveguide at an acute angle, as in the context of claim 1.

The closest prior art, Koh, discloses an antenna, mixer and waveguide, however Koh does not teach or suggest the mixing channel intersecting the local oscillator waveguide at an acute angle, and there is no motivation to form an acute angle in the product of modified Koh, as in the context of claim 1.

Response to Amendment

The objection to the drawings for being unclear as to how the three etched layers are shown in Figure 1 and the labeling of the layers in Fig.6a-b is withdrawn in view of the amendments to the drawings, which are acceptable to the examiner.

The drawings remain objected to since the subject matter of claim 4 admits of illustration.

The prior art rejection over Koh in view of WO 98/42486 is withdrawn in view of the claim amendment of a mixing channel intersecting the local oscillator waveguide at an acute angle and applicant's arguments on page 7 of the response filed on 1/7/08.

Response to Arguments

Applicant's arguments filed 5/2/08 and 1/7/08 have been fully considered but they are not persuasive, to the extent they still apply. Applicant argues that supplying lead lines in Figure 1 is sufficient to show the use of three substrates, as in claim 4. In response, Figure 1 is a broad overview of the imaging device, and does not show how when the three layers/substrates are brought together, the etch patterns of their surfaces match (page 6, lines 26-29). There is no figure present that shows how the substrates cooperate to form an antenna, mixer channel and a waveguide of the imaging device. Also in claim 4, how three substrates define two rows of detectors admits to illustration. A drawing with a three-dimensional view could be presented to show the claim 4 relationship of the three substrates just prior to joining the substrates.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nightingale is cited to show a method of making an imaging device for millimeter radiation with contact lithography.

This application is in condition for allowance except for the following formal matters:

Correction of drawings, specification and claims as outlined above. Claim 4 admits to illustration and the specification and claims have minor typographical errors.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon-Fri until 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anita K Alanko/
Primary Examiner
Art Unit 1792